IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of	Docket No: Q102939
Roger MAITLAND, et al.	
Appln. No.: 10/762,364	Group Art Unit: 2434
Confirmation No.: 4471	Examiner: TRAN, ELLEN C
Filed: January 23, 2004	

For: METHODS AND APPARATUS FOR PARALLEL IMPLEMENTATIONS OF TABLE LOOK-UPS
AND CIPHERING

REPLY BRIEF PURSUANT TO 37 C.F.R. § 41.41

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.41, Appellant respectfully submits this Reply Brief

in response to the Examiner's Answer dated September 15, 2011. Entry of this Reply Brief is respectfully

requested.

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STATUS OF CLAIMS

Claims 1-79 are pending.

Claims 74-79 are rejected under 35 USC 103(a) as unpatentable over Kim et al (WO 03/050784) in view of Luyster (USP 6,751,319).

Claims 1, 2, 5, 6, 11-13, 16, 21-28, 30, 31, 33-42, 44, 45, 47-73 and 77-79 are rejected under 35 USC 103(a) as unpatentable over Kim et al in view of Luyster, and further in view of 3GPP TS 35.202 v3.1.1 Release 1999 (3GPP).

Claims 3, 4, 7-10, 14, 15, 17-20, 29, 32, 34, 43 and 46 are rejected under 35 USC 103(a) as unpatentable over Kim et al in view of Luyster and 3GPP, and further in view of Weybrew et al (USP 6,931,511).

All claims are appealed.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are:

1. Whether claims 74-79 are unpatentable over Kim et al (WO 03/050784) in view of Luyster (USP 6,751,319).

2. Whether claims 1, 2, 5, 6, 11-13, 16, 21-28, 30, 31, 33-42, 44, 45, 47-73 and 77-79 are unpatentable over Kim et al in view of Luyster and further in view of 3GPP TS 35.202 v3.1.1 Release 1999 (3GPP).

3. Whether claims 3, 4, 7-10, 14, 15, 17-20, 29, 32, 34, 43 and 46 are unpatentable over Kim et al in vie of Luyster and 3GPP, and further in view of Weybrew et al (USP 6,931,511).

ARGUMENT

The claims distinguish over the prior art for the reasons set forth in the Appeal Brief filed May 18, 2011. The following additional comments are provided in response to specific made in the Examiner's Answer mailed September 15, 2011.

In all of the rejections stated by the examiner, Kim is the primary reference and is relied on to teach the steps of the claimed invention except for the specific use of lookup tables, and secondary art is relied on to teach the use of lookup tables, the argument being that it would have been obvious to use lookup tables to implement the algorithm steps of Kim, thereby resulting in the claimed invention. Before getting to the issue of whether or not it would have been obvious to combine the teachings of the prior art in the manner proposed by the examiner, a basic issue is that the method/process steps used by Kim to implement the Kasumi algorithm are different from what is done in the present invention, so even if lookup tables were used to implement Kim, the claimed invention would not result.

Claims 74-76 Are Not Unpatentable Over Kim et al in view of Luyster

By way of illustration, Claim 74 reads:

> 74.   A method comprising the step of, responsive to a plurality of inputs, each input being defined by at least one bit, for each input of the plurality of inputs and in parallel with other inputs of the plurality of inputs, looking-up a look-up table having a plurality of elements using the at least one bit that define the input to obtain an output.

Thus, there must be a plurality of inputs, and in parallel with one another a plurality of inputs are used to access respective lookup tables, to obtain an output for each of the plurality of inputs. In explaining the rejection of claims 74-76 at page 5 of the Answer the examiner alleges "note the first pipeline stores upper 16-bit data of *the* 32-bit input. The upper 16-bit data is interpreted to be equivalent to a first set of bits, the lower 16-bit data is interpreted be equivalent to the second set . . . ". (emphasis added) Thus, the examiner herself agrees that the upper 16-but data and the lower 16-but data are parts of a single input. Thus, by the examiner's own characterization, the upper and lower 16-bit data are not a plurality of inputs but instead are different parts of a single output, and claim 74 would not be satisfied even if Kim were implemented with lookup tables as taught by Luyster.

Appellant explained this flaw in the examiner's reasoning in the earlier filed Appeal Brief, and in her Answer at page she attempts to address this problem by first arguing that appellant's own disclosure describes parallel calculation of the S7 and S9 functions of the Kasumi algorithm, so it is consistent with appellant's own disclosure to consider the claimed plurality of inputs to be the equivalent of the plurality of bits described in Kim. This argument by the examiner is flawed on at least two counts. First, the fact that that the present application may describe parallel operation does not mean that the prior art teaches this. An applicant's own disclosure cannot be used against him in this manner. Second, the examiner has misread appellant's disclosure and taken the quoted comment out of context. The "plurality of inputs" in the present application are not one set of inputs for the S7 function and another set of inputs for the S9 function. To the contrary, the hardware shown in Fig. ? is for implementing the S7 function, and the specification clearly states that this S7 function is performed in parallel for a plurality of inputs.

A second problem is that, as also explained in the Appeal Brief of May 18, 2011, claim 74 recites "in parallel with other inputs of the plurality of inputs," and the upper and lower bit portions in Kim are used in series, not parallel. The examiner attempts to address this flaw at page 20 of the Answer by noting that the prior art teaches calculation of the S7 and S9 functions in parallel, but this does not solve the problem. Even if this were true, that would not change the fact that the upper 16-bit and lower 16-bit portions in Kim are used in series and cannot correspond to the claimed first and second inputs. If there is some other reading of the claim language on Kim that might support the rejection, the examiner should go through the exercise of reading the claim language on these other aspects of Kim. She has not done so, and has therefore failed to present a prima facie case of obviousness.

The same basis for reversal applies to all of claims 74-76.

Claims 1, 2, 5, 6, 11-13, 16, 21-28, 30, 31, 33-42, 44, 45, 47-73 And 77-79 Are Not Unpatentable Over Kim et al In View of Luyster And Further In View of 3GPP TS 35.202 v3.1.1 Release 1999 (3GPP).

Claim 1 describes each input as including a first set of bits used to access a lookup table, with first sets of bits from plural inputs accessing plural lookup tables to collectively obtain a set of outputs, and then one of the outputs from the set of outputs is selected using a second set from at least one of the inputs. This is in addition to claim 1 reciting "for each input of the plurality of inputs and in parallel with other inputs of the plurality of inputs" just as is recited in claim 74. Again, the examiner reads the upper 16-bit portion and lower

16-bit portion in Kim to be *separate* inputs, yet at the same time characterizes them as parts of the *same* input. And the examiner has not addressed the problem that *these* alleged plural inputs are used in series, not in parallel. The examiner spends a great deal of time explaining how use of these inputs to access respective lookup tables would satisfy the claim language. Appellants submit that it would not satisfy the claim language, for reasons discussed in the Appeal Brief. But even aside from that, the only reading of claim language on Kim that has been offered by the examiner is a reading by which these different 16-bit portions of a single input are considered to be "the equivalent" of the claimed plurality of inputs, and when the examiner encounters the fatal problem that they are not used in parallel, the examiner then argues that other aspects of Kim would be in parallel (e.g., parallel calculation of the S7 and S9 functions). But if the examiner is going to rely on other parts of Kim as the plurality of inputs, then the entire reading of the claim language on Kim is moot, and the examner has not provided a prima facie case of obviousness.

Claims 3, 4, 7-10, 14, 15, 17-20, 29, 32, 34, 43 And 46 Are Not Unpatentable Over Kim et al In View of Luyster And 3GPP, And Further In View of Weybrew et al

These claims are all patentable due to dependence on patentable parent claims as discussd above.

CONCLUSION

The flaws in the stated rejection explained in the Appeal Brief of May 18, 2011 compel reversal of the examiner. Beginning at page 19 of the Answer the examiner has attempted to respond, but the examiner never really disagrees that the upper 16 bits and lower 16 bits referred to in Kim and discussed at the bottom of page 4 of the Answer are two different parts of the same input, nor does the examiner disagree that these two parts of the same input are used in series, and not in parallel. Instead, the examiner spends a great deal of time explaining why she is justified in considering these two different parts of the same input to be the equivalent of the claimed two inputs. But equivalency is not the standard for reading claims on the prior art.

If the upper and lower 16-bit portions in Kim are properly considered separate inputs, which is illogical, it does not solve the problem that they are used in series and not in parallel as required by the claims. On the other hand if there is some other aspect (e.g., parallel calculation of S7 and S9 functions) which would support

the claimed parallel operation, there has been no explanation of how that reading would meet all of the other limitations of the claims, so there has been no prima facie case of obviousness.

For the above reasons as well as the reasons set forth in Appeal Brief, Appellant respectfully requests that the Board reverse the Examiner's rejections of all claims on Appeal. An early and favorable decision on the merits of this Appeal is respectfully requested.

Respectfully submitted,

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